MW & BC Funded Projects
MSU
1981-82

TITLE: Purchase of Near Infrared Reflectance Apparatus for the Cereal Quality Laboratory

INSTITUTION: Montana State University

DEPARTMENT: Plant Pathology

RESEARCHERS: C. F. McGurie

AMOUNT FUNDED: $3,000.00

OBJECTIVES:
1) Near Infrared Reflectance technology allows the rapid measurement of such quality parameters in wheat and barley as protein percentage, moisture percentage, fiber content, amino acid content, plus other traits as need arises.

==========

TITLE: Control of soil-borne diseases of wheat and barley

INSTITUTION: Montana State University

DEPARTMENT: Plant & Soil Sciences

RESEARCHERS: Don Mathre

AMOUNT FUNDED: $21,400.00

OBJECTIVES:
1) To test in the greenhouse and field systemic fungicides for their capacity to control common root rot and increase yield of spring wheat, spring barley, and winter wheat.

2) To test in the field the effect of systemic seed treatment fungicides for their capacity to decrease winter kill in winter wheat.

3) To advance another generation of materials being developed for resistance to Cephalosporium stripe and field test them in a variety of locations with and without this

disease.

4) To test new sources of resistance for Cephalosporium stripe and determine the feasibility of using them in an agronomic program for developing resistance to Cephalosporium stripe in winter wheat.

5) To test new seed treatment compounds and formulations for control of barley stripe disease, both in the greenhouse and field.

6) To continue our work with officials of the Chinese Ministry of Agriculture in determining the factors that affect the development of TCK smut on winter wheat in Montana.

==========

TITLE: Control of Volunteer Grain in Recropped Wheat and Barley

INSTITUTION: Montana State University

DEPARTMENT: Plant & Soil Sciences/Engineering & Computer Science

RESEARCHERS: Bruce McLead, Stan Gliko, James R. Sims

AMOUNT FUNDED: $1,000.00

OBJECTIVES:
1) To determine the optimum microwave power level and exposure time to kill all crop and weed seed ejected from the back of a combine.

2) To suggest design features of a combine-mounted microwave unit.

==========

TITLE: Restoration of Fertility and Productivity of Montana Soils with Cereal-Legume Rotations and/or Chemical Fertilizers

INSTITUTION: Montana State University

DEPARTMENT: Plant & Soil Science

RESEARCHERS: James R. Sims, Saidou Koala, Hatim El-Attar

AMOUNT FUNDED: $2,000.00

OBJECTIVES:
1) Develop annual forage legume-cereal rotations.

2) Develop annual grain legume-cereal rotations.

==========

TITLE: Improved Winterhardiness for Winter Wheat Production in Montana

INSTITUTION: Montana State University

DEPARTMENT: Plant & Soil Sciences

RESEARCHERS: Jarvis H. Brown, Michael J. wille, G. Allan Taylor

AMOUNT FUNDED: $8,510.00

OBJECTIVE:
1) To help develop winter wheat varieties with increased winter-hardiness in Montana environments.

==========

TITLE: Winter Wheat Improvement

INSTITUTION: Montana State University

DEPARTMENT: Plant & Soil Sciences

RESEARCHERS: Allan Taylor, Dana Nile, Hollis Spitler, Muhammad Khan, Steve Allen, Sadiq Chaudhry

AMOUNT FUNDED: $26,000.00

OBJECTIVES:
1) Evaluate early generation selection for grain yield in winter wheat.

2) General support for the winter wheat breeding project.

==========

TITLE: Barley Breeding

INSTITUTION: Montana State University

DEPARTMENT: Plant & Soil Sciences

RESEARCHERS: Robert F. Eslick

AMOUNT FUNDED: $17,000.00

OBJECTIVE:
1) Montana Wheat Research and Marketing Committee has supported barley breeding endeavors for the past 4 years. As a result, we have on hand a number of genes that incluence agronomic performance, processing characteristics, and end-product characteristics (value). Currently we have chosen the Betzes genetic background as the primary recipient of all the available genes.

==========

TITLE: Winter Wheat Quality Relative to Fertilization With Sulfate, Chloride, Phosphate, and Nitrogen

INSTITUTION: Montana State University

DEPARTMENT: Plant & Soil Sciences

RESEARCHERS: Charles McGuire

AMOUNT FUNDED: $5,800.00

OBJECTIVES:
1) Compare the effect of K_2SO_4 and KC1 on winter wheat yield protein, and yellow berry. Determine the extent of C1 interference with nitrate uptake. Resole the effect of phosphorous on yellow berry. Determine if K_2SO_4 might be a more beneficial source of potassium for dryland winter wheat.

==========

TITLE: Development of practical and Economic Continuous and Other Cropping Systems for Grain Production in Montana

INSTITUTION: Montana State University

DEPARTMENT: Ag Research Centers

RESEARCHERS: Various

AMOUNT FUNDED: $31,300.00

OBJECTIVE:

1) Under the present system of grain culture in Montana many problems associated with the alternate and cropfallow system indicate a needed change to new and practical methods of continuous cropping and/or other economic cropping sequences.